



# SQ-1 INTELLIGENT ROOF TRUSS TABLE

Operators Manual

## ROOF TRUSS TABLE

With Intelligent  
Gantry.  
Zone Eject  
Automated Jigging

**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT!**

## **FOREWORD**

**This manual explains the proper maintenance of Square 1 Design Roof Truss Table as well as periodic inspection procedures.** Please read this manual thoroughly even though you may already be familiar with other Square 1 Design equipment, because it contains the most current information about the Square 1 Design Roof Truss Table. This manual has been based on the standard Square 1 Design Roof Truss Table. If you have any questions on modifications to your equipment, please contact Square 1 Design., or your sales representative. Square 1 Design reserves the right to make any changes or modifications to this manual or its Roof Truss Table without giving notice and without incurring obligation.

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## **BEFORE INITIAL OPERATION**

- **Please read this manual thoroughly.** This will give you a better understanding of a Square 1 Design Roof Truss Table and permit you to operate it correctly and safely.
- **Identify and inform ALL employees who will operate or be near the Square 1 Design equipment of all concerns in this manual and on the production Roof.** It is very important from both the employers and manufactures standpoint that employee's safety comes above all else. The employer should make sure any employee who either operates or works near the equipment has been properly trained and given written notice of any and all safety concerns on the production Roof.
- **Always perform pre-operation checks and periodic maintenance.** This will help prevent sudden malfunctions (due to poorly maintained equipment), improve work efficiency and help insure safe working conditions.

## **GENERAL DESCRIPTION**

The Square 1 Design Roof Truss Table is a solid steel top. It is designed to be used in conjunction with a SQ-1 Intelligent Gantry to increase the assembly speed of finished wood trusses. The standard Square 1 Design Roof Truss Table is a durable top, providing rapid, unencumbered use of plating and pressing. When used with the Square 1 Design Gantry Roller's heavy-duty design will allow it to press even the heaviest gauge plate very quickly and easily.

Any information that is needed can be obtained by contacting you sales representative or:

**Square 1 Design & Manufacture Inc.**

**1 Clark Road**

**Shelbyville, IN 46176**

**Phone: +1-866-647-7771**

**Fax: +1-866-646-5771**

**[www.Square1Design.com](http://www.Square1Design.com)**

**[Sales@square1design.com](mailto:Sales@square1design.com)**

## **OPERATION OF THE ROOF TRUSS TABLE**

The Square 1 Design Roof Truss Table is very simple to operate and maintain. Square 1 Design suggests that operation of Square 1 Design equipment proceed in the following manor:

1. Everyone near the machine read the manual so general safety guidelines can be identified.
2. Everyone near the machine identify the safety devices and how they operate.
3. Perform daily, weekly, and monthly safety and maintenance analysis.
4. Correct any problems before operation of the equipment is started.
5. Check the area before beginning to be certain no employees are near the machine.

## **SAFETY AND MAINTENANCE**

Employee safety is to key concern at Square 1 Design Manufacturing and should also be at your production facility. It is important to stress safety concerns around any type of production equipment because serious injury can occur without the proper training and supervision. Square 1 Design & Manufacture Inc. suggests that any employee who will operate or work around this equipment be given the opportunity to read this manual and receive training from qualified personnel at your facility. With the proper maintenance the equipment and work area become much safer. Square 1 Design & Manufacture Inc. has the following list of general safety and maintenance guidelines that should accompany any safety standards your company has established.

### **SAFETY GUIDELINES**

1. **Cleanliness:** The area surrounding the Square 1 Design Roof Truss Table must be checked daily for any obstructions such as loose lumber or plates that could jam any area of the machine.
2. **Operate new equipment with special caution:** People are sometimes overconfident that the new equipment will work just like old equipment. This is not always true, and a special caution should be taken around the new equipment.
3. **Proper equipment use:** Individuals working on or near the Square 1 Design Equipment, to prevent injury, should wear the proper equipment. Loose fitting clothing that can be caught in the machine or on the associated Gantry itself should **NOT** worn. Safety glasses **MUST** be worn for the protection of the employees. Employees without the Proper equipment should not be allowed near the Square 1 Design Roof Truss Table. It is management's responsibility to enforce these guidelines, as well as the employee's responsibility to make sure these guidelines are enforced.
4. **Safety Switches/Safety Laser Scanners should be identified and proven to be in proper working order.** All employees who will be working on or near the Square 1 Design Gantry Roller should know how the safety features work and confirm the machine is operating properly. If any employee notices the equipment may be malfunctioning in any way, a supervisor is to be notified and the power to the equipment is to be locked down until the problem can be rectified.
5. **Disconnect and lock out all power sources before any maintenance or repair is to take place.** It is important for the equipment's power to be disconnected and locked out to prevent accidental start-ups whether by another employee or workers error.
6. **Follow the safety checklist Daily.** The following checklist should be followed daily to ensure employees safety and a safe work environment.

## **SAFETY CHECKLIST**

### **Daily on associated Gantry:**

- A. Check safety bars/laser safety scanners on associated Gantry to assure they functioning as intended.
- B. Check to make sure the machine stops properly when the safety bars/laser safety sensors are activated.
- C. Check for unusual noised, overheating, oil leaks, or other unusual machine characteristics.
- D. Check bearings for wear.
- E. Visually inspect motors and gearboxes for excessive dirt, heat, or vibration.
- F. Check gearbox oil levels (fill as required)
- G. Check ventilation openings to assure they are not clogged by dirt or dust.
- H. Check the area around the machine and track for cleanliness.
- I. Check to be sure everyone around the machine is wearing the proper equipment.
- J. Perform daily maintenance
- K. Be sure area is clear of people when starting the machine.

### **Weekly on associated Gantry:**

- A. Check all bolts, nuts and set screws and tighten as require.
- B. Check drive train tension and adjust if necessary.
- C. Check oil level in drive unit and add proper amount if necessary.
- D. Use compressed air to remove sawdust and dirt build-up on the system and around the bearings. \*

**\*Wear eye protection when using the compressed air.**

## **MAINTENANCE**

As mentioned earlier, keeping the equipment well maintained makes the work environment safer and allows reliable production for many years. Maintenance of the Square 1 Design Roof Truss Table and associated Gantry consists of lubricating the machine and chain, then tightening the nuts and bolts. The following is a maintenance schedule MUST be followed.

**Motors:** The gearboxes on each motor have sight gauges for oil levels; insure that both motors are kept at the correct level.

**Chain:** A non-detergent petroleum-based oil every 18 hours should be used.

**Greased Fittings:** General-purpose grease should be used every 8 hours or as needed.

**Nuts and Bolts:** All nuts and bolts must be checked and tightened before operation of the Gantry Roller.

**Air Lines:** All Air fittings and lines must be checked to provide the correct air volume.

### **General Operation**

Operation of the Square 1 Design Gantry roller requires the operator to not only pay attention to his safety but to every other employee's safety as well. The entire work area must be inspected before operation of the machine.

After the safety inspection, the operator should review the functions of the control buttons. There are multiple buttons on the standard gantry that allow the operator to run the machine and operate the ejectors. They are as follows:

### **Table Function**

The Square 1 Design Intelligent Roof Truss Table System allows for the automated jiggling and plating of trusses on a single side. This are then rolled and pressed by the Square 1 Design Gantry. The Truss is then ejected from either the side or the end by the operator on the gantry.

Depending on the size of the truss and the table it allows for multiple trusses to be built simultaneously. Operators on the gantry can select which ejectors will be used.

A Truss is laid out on the table. Lumber is placed at the location using the jiggling and verified with the print. Nail plates are tacked into place on the topside and placed on the bottom side of the lumber. Once the table is clear of employee's and equipment the Gantry is operated to press in the plates.

Upon a completed press, the Gantry operator then presses the Zone Button for the pre-determined zone and the truss ejects to its next process.

**ALWAYS DISCONNECT AND LOCK OUT ANY POWER SOURCES WHEN ADJUSTING OR REPAIRING ANY EQUIPMENT!**



## **REPAIR AND REPLACEMENT**

In the case that a part of the machine is not working properly, this section lists how to remove and replace the correct part from Square 1 Design Intelligent Roof Truss Table. If parts are needed it is recommended that you contact Square 1 Design & Manufacture Inc. at the address listed below.

### **ELECTRICAL**

The following sections cover the electrical portions of the associated Square 1 Design Gantry Roller. Exhibits listed throughout this section contain a parts list and breakout of each item. Replacement parts are available as individual components or as complete units. Square 1 Design machines use SO multi-conductor cable with sealed fittings. Any repairs should be done using the same materials.

### **AUTOMATIC SOLENOID VALVES**

These are available as a complete unit, a valve body, valve coil or cable. Refer to the provided parts list below to determine the correct part needed.

### **CONTROL PANEL**

This unit is available as a complete control panel, a starter, or component parts for starters. Refer to the Electrical Schematic provided for parts list, breakout, and schematic to determine the information needed.

### **ELECTRICAL TRACK**

The Square 1 Design Roof Truss Table and associated Gantry use a table mounted conductor rail. It provides a protected conductor arrangement with horizontal installation for minimal required space, a safe design do to covered connectors and fast economical mounting with clip-on hangers and several connecting options.

### **PNEUMATICS**

Air is stored under the table in 19-gallon tanks, to help eliminate a lack of volume for ejectors. This also can allow for the integration of nail, staple or air gun connections to the table.

### **CYLINDERS**

There are two cylinders located on each ejector. These are can be replaced as a complete unit or as a rebuild kit.

## **WARRANTY**

Square 1 Design & Manufacture, Inc. warrants the equipment manufactured by it, to be free from defects in materials or workmanship for one (1) year from the date of delivery to the original purchaser. This is provided the equipment had been properly installed, operated, used, cared for, adjusted, cleaned and lubricated by the owner. All equipment claimed to be defective shall be returned to Square 1 Design & Manufacture, Inc. charges prepaid. All collect shipments will be refused. If upon inspection Square 1 Design & Manufacture Inc. determines to its satisfaction, that any part of the equipment is defective, Square 1 Design & Manufacture, Inc, at its option, correct the defect by repair or replacement.

This warranty shall not apply if the original equipment had been altered or modified by any person other than Square 1 Design & Manufacture Inc. This Warranty shall not apply to starters, motors, gear reducers, or microswitches that are component parts of the equipment. Those separate component parts are governed by separate warranties of the respective component manufacturers, which warranties of the respective component manufacturers which warranties may be shorter than or longer than the one (1) year warranty granted by Square 1 Design & Manufacture, Inc. upon request by the owner. Any repairs are available from Square 1 Design & Manufacture Inc. upon request by owner. Any repair or replacement of such component parts shall be governed solely by manufacturer, and it shall be owner's responsibility to enforce any warranty claims directly with such component part manufacturer.

**EXCEPTION FOR THIS WARRANTY AS EXPRESSLY STATED, SQUARE 1 DESIGN & MANUFACTURE, INC. MAKES NO OTHER WARRANT EXPRESSED OR IMPLIED. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS HEREBY DISCLAIMED.**

Square 1 Design & Manufacture Inc. shall not be liable for damages, direct, consequential, or incidental, or for delays, if such occur as a result of defects in material or workmanship.

## **SQUARE 1 DESIGN & MANUFACTURE INC.**

**PURCHASE DATE:** \_\_\_\_\_

**MODEL NUMBER:** \_\_\_\_\_

**SERIAL NUMBER:** \_\_\_\_\_

## **ORDERING REPLACEMENT PARTS:**

Replacement parts can be ordered by calling, emailing, or faxing:

**Square 1 Design & Manufacture Inc.**

**1 Clark Road**

**Shelbyville, IN 46176**

**Phone: +1-866-647-7771**

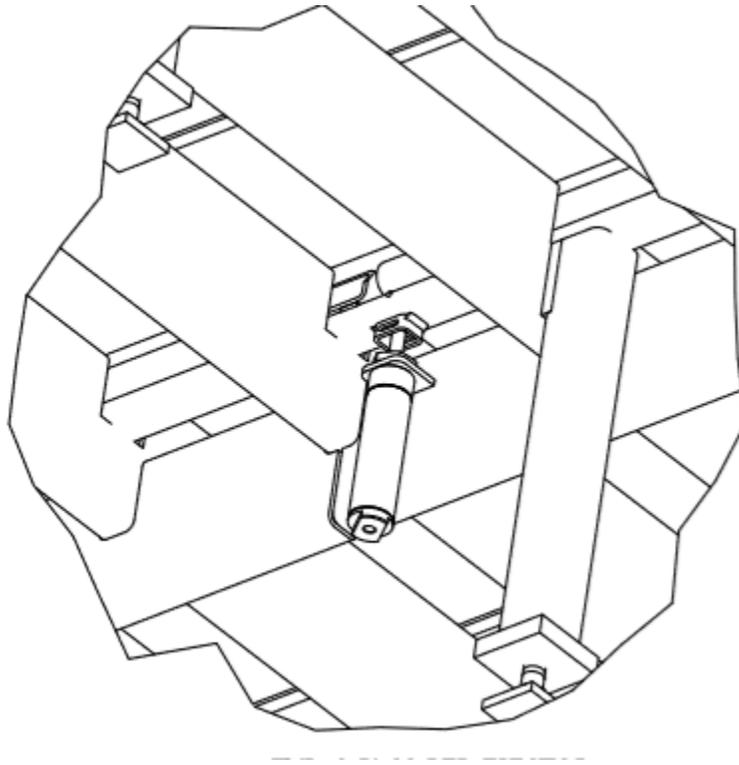
**Fax: +1-866-646-5771**

**[www.Square1Design.com](http://www.Square1Design.com)**

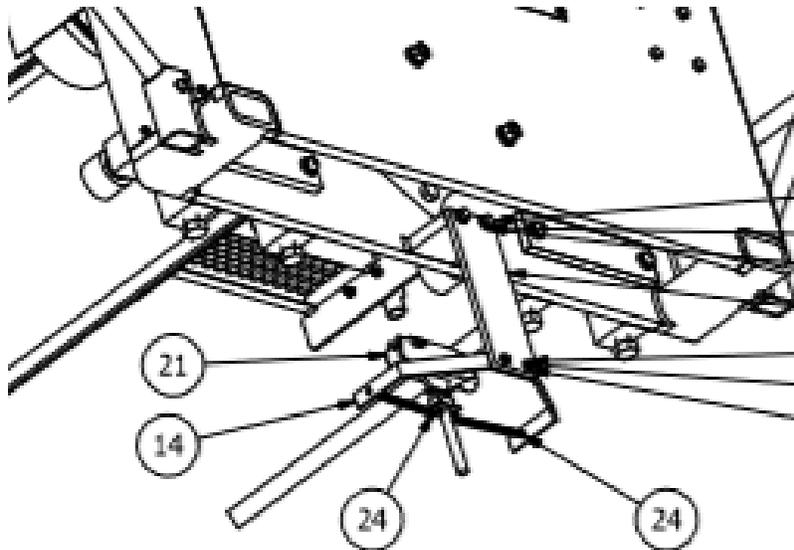
**[Sales@square1design.com](mailto:Sales@square1design.com)**

When ordering parts, you must include the serial and model #'s of your Square 1 Design Gantry Roller.

### **Detail A – End Eject Cylinder**



### **Detail B – Electrical Collector**



## Intelligent Roof Truss Table Spare Parts

<b>Part Number</b>	<b>Location</b>	<b>Page Location</b>
*ELAC-0002	Electrical Collector (Yellow)	Detail B, Number 24
*ELAC-0125	Collector Tow Arm (Yellow)	Detail B, Number 14
*ELAC-0006	Joint Cover (Yellow)	Not Pictured
*ELAC-0007	Anchor Clamp (Yellow)	Not Pictured
*ELAC-0101	Hanger Clamp (Yellow)	Not Pictured
*ELAC-0010	End Cap (Yellow)	Not Pictured
*ELAC-0004	Conductor Rail (Yellow)	Not Pictured
*ELAC-0155	Conductor Rail (Gray)	Not Pictured
*ELAC-0157	Current End Feed (Gray)	Not Pictured
*ELAC-0014	Joint Cover (Gray)	Not Pictured
*ELAC-0015	End Cap (Gray)	Not Pictured
*ELAC-0016	Anchor Clamp (Gray)	Not Pictured
*ELAC-0017	Hanger Clamp (Gray)	Not Pictured
*ELAC-0018	Electrical Collector (Gray)	Detail B, Number 24
*ELAC-0019	Electrical Tow Arm (Gray)	Not Pictured
AIR-0020	Solenoid Valve	Not Pictured
AIR-0021	Solenoid Coil (120v)	Not Pictured
AIR-0022	Solenoid Coil (12vdc/24vac)	Not Pictured
CYL-0022	Ejector Cylinder 7"	Not Pictured
CYL-0023	Ejector Cylinder 8-1/2"	Not Pictured
CYL-0024	Ejector Cylinder 10-1/2"	Not Pictured
CYL-0025	Ejector Cylinder 16-1/2"	Not Pictured
<b>*Please Specify Manufacture of Electrical Track Color as some SQ-1 Gantry Systems may vary.</b>		